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Wheat Variety Trials

The 1998 - 1999 wheat crop turned out to be one of the best crops on record for many Texas Panhandle producers. Reports of 100 bu/Acre dryland wheat were recorded in some parts of the region. Forty to 50 bu dryland yields were common. Exceptional rainfall, mild temperatures during grain fill, and little disease or insect pressure all contributed to the exceptional yield. Five wheat variety trials were conducted at various locations across the Panhandle by the Texas Agriculture Extension Service and Texas Agriculture Experiment Station (See attached table). This years growing conditions tended to favor the longer maturing varieties. One of the most surprising results of this years tests was the performance of Lockett. Lockett is a new beardless variety that was released by Texas A&M to be used primarily for forage. Under more normal rainfall conditions and a warmer spring I would not expect Lockett to perform this well. Another surprise was the yield of TAM 302 which was the number one variety in the Bushland irrigated test yielding 115 bu/Acre. This is a Dallas released variety from Dr. David Marshall's breeding program. In the past, Dallas released varieties have not yielded well in the Panhandle. 2137 is a variety that continues to yield well under a wide range of conditions. Over the last four years it has consistently been one of the top five varieties. Although the TAM varieties were not top dryland yielders in 1999, previous experience suggests that they should be strongly considered by producers. In the Eastern Panhandle, Tomahawk and Custer have consistently performed well over the last four years, however, they have not yielded as well when planted further west in the Panhandle. For forage production TAM 109, Longhorn, and Lockett are beardless varieties that should be considered for graze out or possibly as dual purpose wheats. A test was conducted at Bushland examining both the forage and grain yield of 10 varieties. If you would like a copy of this data let me know.

Table 1. Wheat variety recommendations.

Top Variety Picks	
Full Irrigation	Dryland
TAM 200	TAM 110
TAM 202	TAM 200
2137	TAM 105
Ogallala	2137
Rowdy	Triumph/Scout

Making Plans for the Next Crop

Because of the exceptionally high dryland wheat yields that many producers achieved this year, it may be necessary to apply more fertilizer for next year's crop than in previous years. The general nitrogen recommendation for wheat is 1.2 lb N for every 1 bushel of expected grain yield. For example, a 40 bushel wheat yield would require 48 lbs N/Acre. In addition, another 10 to 20 lbs of N may be needed to aid in the breaking down of the large amount of wheat residue that is present in many fields. Phosphorus is the second most important nutrient for wheat production. It is especially beneficial

in increasing forage production. Since phosphorus is immobile in the soil it must be injected or incorporated into the root zone. The nutrient also seems to work best when concentrated in bands rather than applied broadcast. Consider applying 30 to 40 lbs of P/Acre for dryland production and 60 lbs of P/Acre under irrigation. If you would like additional information on the benefits of phosphorus for wheat forage production please let me know.

If sorghum is to be grown following this year's wheat crop the general nitrogen recommendation is 2 lbs N for every one hundred lbs of expected grain yield.

Benefits of Wheat Residue

Many studies have been conducted that show the benefit of wheat residue on increasing precipitation storage in the soil. The amount of grain yield produced under dryland conditions is directly correlated to precipitation stored prior to planting (Table 2). Wheat residue produced can be estimated by multiplying the bushels of wheat harvested by 100. For example, 30 bushels of wheat produces 3,000 pounds of residue per acre. About half of the total residue produced will be standing stubble. Because of the benefit of residue on stored soil moisture every effort should be made to maintain surface wheat residue. Various tillage operations will reduce the amount of surface residue differently (Table 3).

If wheat is to be planted this fall the highest amount of precipitation will be stored by leaving the wheat stubble standing and using herbicides to control weeds. If residue amounts are too high to plant in, the straw can be burned off just prior to planting. If sorghum is to be the next crop either no-till using herbicides for weed control, or use sweep tillage. Sorghum can be planted in all but the highest amount of wheat residue. Keep in mind that if wheat residue is to be burned, you must let the TNRCC know 24 hours in advance. In addition, it is a good idea to let your local fire department know of your intentions.

Bindweed Control with Paramount

Paramount herbicide was recently approved for use in grain sorghum for the control of bindweed in 14 Texas Panhandle counties. Although it has a federal label for **fallow or preplant** application in wheat or sorghum, TDA has not approved it for this use in Texas. Paramount is a very effective bindweed herbicide. I will keep you posted as to it's labeling status in Texas.

Table 2. Surface wheat residue effect on stored moisture and dryland sorghum yield.

lbs. Residue/ Acre	Precip. Stored During Fallow (in)	Yield, lb/Acre
0	2.8	1,590
890	3.9	2,152
1,782	3.9	2,322
2,670	4.6	2,661
7,120	5.5	3,286
10,680	5.8	3,563

Unger, 1978

Table 3. Tillage effect on surface residue.

Tillage Implement	% Residue Remaining after each operation
Chisel, straight shovels	75
Disk (6 inches deep)	60
Field Cult.	80
Sweep	90

Kansas State, 1989